CLAIMS

What is claimed is:

28. A medicament comprising a plurality of coated drug particles, each of said coated drug particles having an average particle size of less than 500 μm in diameter, the surface of said particles comprising at least a first coating layer of biodegradable and bio-compatible material, wherein an average thickness of said coating layer is between 1 and 500 nm.

29. A medicament comprising a plurality of coated drug particles, each of said coated drug particles having an average particle size of less than 500 μm in diameter, the surface of said particles comprising at least a first coating layer of biodegradable and bio-compatible material, wherein an average thickness of said coating layer is between 1 and 500 nm, the coated drug particles being obtainable through a process comprising depositing said polymeric coating particles onto the surface of host drug particles by a process comprising pulsed laser ablation.

30. The medicament according to claim 28, wherein said coating layer material is at least one selected from the group consisting of PLA, PGA, PLGA and cellulose compounds.

31. The medicament according to claim 28, wherein said coated drug particles have an average particle size of less than 100 μm in diameter.

32. The medicament according to claim 28, wherein said coated drug particles have an average particle size of less than 10 μm in diameter.

33. The medicament according to claim 28, wherein said coated drug particles have an average particle size of less than 1 μm in diameter.

34. The medicament according to claim 28, wherein said coated drug particles have an average particle size of less than 0.1 μm.

35. The medicament according to claim 28, wherein the average thickness of said coating layer is between 1 and 400 nm.

36. The medicament according to claim 28, wherein the average thickness of said coating layer is between 3 and 200 nm.

37. The medicament according to claim 28, wherein the average thickness of said coating layer is between 5 and 50 nm.

38. The medicament according to claim 28, wherein the average thickness of said coating layer is between 50 and 500 nm.

39. The medicament according to claim 28, wherein the average thickness of said coating layer is between 150 and 500 nm.

40. The medicament according to claim 28, wherein the average thickness of said coating layer is between 300 and 500 nm.

41. The medicament according to claim 28, wherein the average size of said coated drug particles is less than 50 nm in diameter.

42. The medicament according to claim 28, wherein the average size of said coated drug particles is less than 30 nm in diameter.

43. The medicament according to claim 28, wherein the average size of said coated drug particles is less than 10 nm in diameter.

44. The medicament according to claim 28, wherein the average size of said coated drug particles is less than 5 nm in diameter.

45. The medicament according to claim 28, wherein said coating layer is a continuous layer.

46. The medicament according to claim 28, wherein said coating layer is a discontinuous layer.

47. The medicament according to claim 46, wherein said discontinuous coating layer results in biphasic dissolution rates of drugs.

48. The medicament according to claim 28, wherein said coated drug particles comprise at least one drug selected from the group consisting of anti-allergics, antibiotics, anti-inflammatories and bronchodilatory drugs.

49. The medicament according to claim 28, wherein said coated drug particles comprise at least one drug selected from the group consisting of budesonide, triamcinolone acetonide and rifampicin.

50. A pharmaceutical formulation comprising the medicament of claim 28.

51. The formulation according to claim 50, wherein said formulation has from 0.01% to 10 % by weight of said medicament relative to the total weight of said formulation.

52. The formulation according to claim 50 containing from 0.1 % to 1 % by weight of said medicament relative to the total weight of said formulation.

53. The formulation according to claim 50, wherein about 20 % to about 50 % by weight of said medicament is a respirable fraction.

54. The formulation according to claim 50, wherein at least 50 % by weight of said medicament is a respirable fraction.

55. The formulation according to claim 50, further comprising at least a second medicament.

56. The formulation according to claim 55, wherein said second medicament is a particulate medicament.

57. The formulation according to claim 55, wherein said second medicament comprises a medicament in accordance with claim 28.

58. The formulation according to claim 50, further comprising a first bronchodilatory medicament and a second medicament, said medicaments each being at least one selected from the group consisting of anti-inflammatory agents, bronchodilatory agents, antibiotic agents and anti-allergic agents.

59. The formulation according to claim 50, further comprising structure for aerosol administration of said formulation.

60. The formulation according to claim 59, wherein said structure for aerosol administration includes a propellant.

61. The formulation according to claim 60, wherein said propellant is at least one selected from the group consisting of fluorocarbons and hydrogen-containing chlorofluoracarbons.

62. A therapeutic kit comprising the medicament of claim 28 and instructions for the administration of said medicament.

63. A therapeutic kit comprising the formulation according to claim 50 and instructions for the administration of said medicament.

64. The therapeutic kit of claim 62, further comprising an aerosol delivery apparatus or a medical device suitable for pulmonary administration of said medicament.

65. The therapeutic kit of claim 63, further comprising an aerosol delivery apparatus or a medical device suitable for pulmonary administration of said medicament.

66. The use of coated drug particles as defined in claim 28 for the manufacture of a medicament for treating a respiratory disorder or pulmonary infection in a human patient.

67. The use of a formulation according claim 50 for the manufacture of a medicament for treating a respiratory disorder or a pulmonary infection in a human patient.

68. A method of preparing the medicament of claim 28, the method comprising the step of depositing onto the surface of a host drug particle at least a first layer that comprises a plurality of polymeric coating particles by a process comprising pulsed laser ablation under vacuum.

69. The method according to claim 68, wherein said pulsed laser ablation process comprises providing a laser which emits radiation having a wavelength of about 240 to about 280 nm.

70. The method according to claim 69, wherein said pulsed laser ablation process comprises providing a laser which emits radiation having a wavelength of about 248 nm.